

# Perchlorate Public Advisory Group

EMERGENT CHEMICALS  
TESTING WITHIN THE  
LOS ANGELES REGION

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# EMERGENT CHEMICAL DETECTION EFFORTS

- Groundwater sampling initiated by the Regional Board (RB) & USEPA in 1997 in Baldwin Park, San Gabriel Valley (SGV) targeting perchlorate and NDMA
- Focus of sampling from 1997 to 2002 has been in specific areas in the SGV, within Superfund areas
- In January 2003, the RB's NPDES Section directed 433 intermittent dischargers to test for the most threatening emergent chemicals.

# Overview of Emergent Chemical

- SDHS been requiring testing of Production wells for unregulated compounds
- Impacts on production wells due to Emergent Chemical detects above AL's
- Enhanced Analytical Testing and Lower Detection Limits
- Development of new Action Levels and MCL's
  - (e.g. Perchlorate MCL by January 1, 2004)

# EMERGENT CHEMICALS

- **1-Nitrosodimethylamine {NDMA}**
- **1,4-Dioxane**
- **1,2,3-Trichloropropane {1,2,3-TCP}**
- **Perchlorate**
- **Hexavalent Chromium {Cr<sup>+6</sup>}**

# **Overview of Emergent Chemical Testing**

- **Assessment Concept**
  - **Individual Source Site Investigations**
  - **Comprehensive Screening Process for Groundwater Dischargers (433 Sites)**
  - **Evaluate Municipal Supply wells throughout Region**
  - **Evaluate any relationship between the data sets**

# NPDES Permits

- NPDES=National Pollutant Discharge Elimination System
- All “Point” Sources Discharging Pollutants Into Waters of the United States Must Obtain an NPDES Permit From EPA or an Approved State - Part 122, 40 CFR
- Individual Permits/General Permits

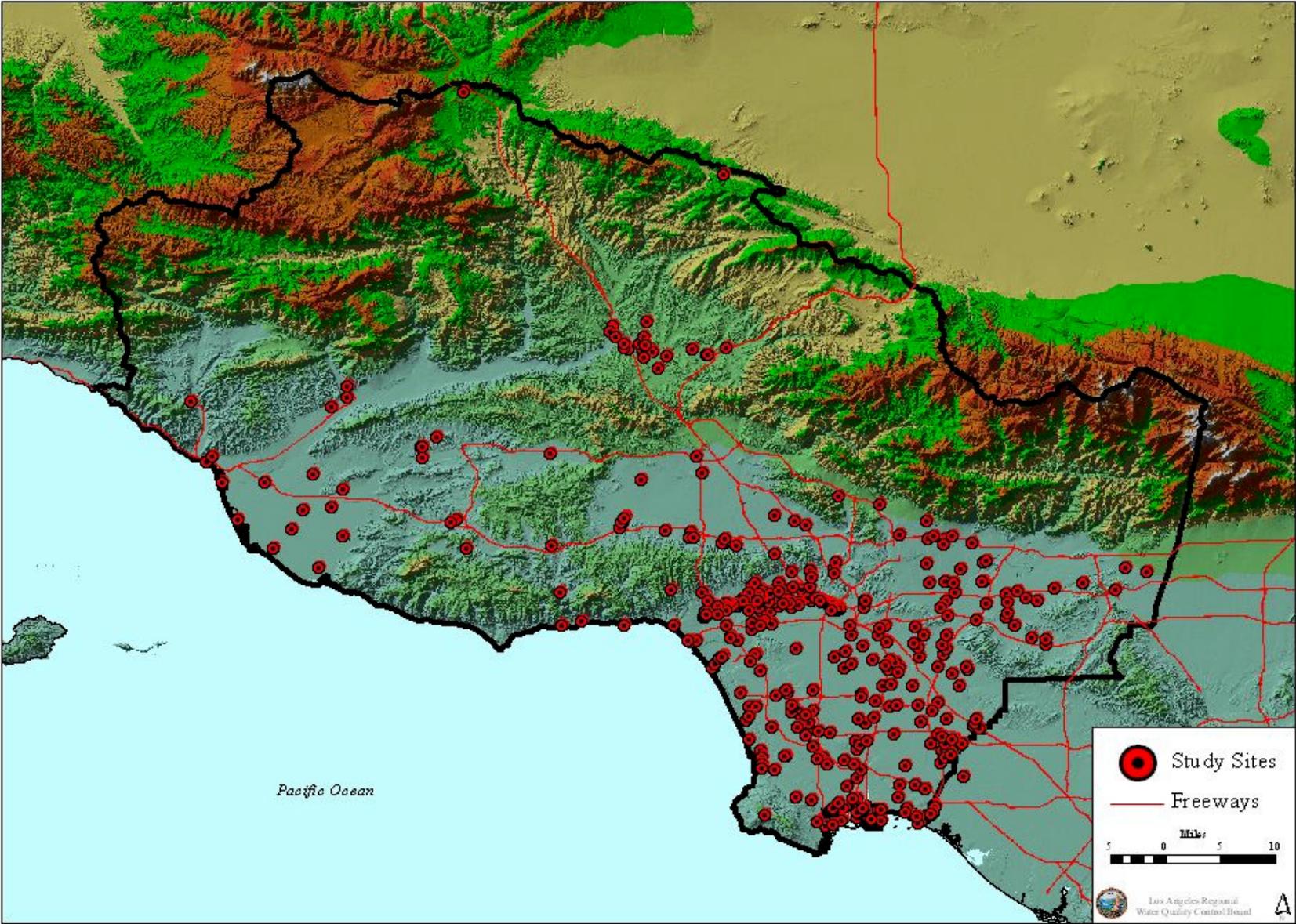
# Region 4's NPDES Dischargers

- **Publicly Owned Treatment Works (POTWs)**
- **Industrial Dischargers - (Refineries, Power Plants) Process Wastewater**
- **Wastewater Mixed With Stormwater Dischargers (Tank Farms)**
- **Treated and Untreated Groundwater From Construction Groundwater Dewatering, Well Development and Purging, Aquifer Testing**
- **Treated Groundwater from Cleanups**
- **Hydrostatic/Fire Test Discharges (Tank Farms)**
- **Non-Process Wastewater (Power Plants-Once Through Cooling Water)**

# 13267 Letters to 433 General Permit Dischargers

- **Sent to General NPDES Permit Holders for Discharge of Groundwater to Surface Waters**
- **Required Testing of Influent Groundwater Samples for Emergent Compounds**
- **Required Under CWC Section 13267- Request for Technical Monitoring Report**
- **Data Will be Used to aid in determining the extent of pollutants in groundwater and potential threat to surface waters**

# Emergent Chemical Sampling Sites



# Summary of Emergent Chemical Sampling

	Perchlorate (ppb)	NDMA (ppb)	Dioxane (ppb)	TCP (ppb)	Chromium (ppb)
<b>MCL/AL</b>	4(AL)	0.01(AL)	3(AL)	0.005(AL)	50(MCL)
<b>Concentration&lt;MCL</b>	10	10	13	1	82
<b>MCL&lt;Conc&lt;2xMCL</b>	3	4	3	1	0
<b>Concentration&gt;2xMCL</b>	3	7	4	10	1
<b>Minimum Reported</b>	2	0.0013	0.0141	0.005	0.0072
<b>Maximum Reported</b>	33	36	310	1	243.4
<b>Required Detection Limit</b>	2	0.002	2	0.005	0.3
<b>Detections</b>	16	21	20	12	83
<b>Non-detect*</b>	144	134	134	144	76
<b>Total Sites</b>	160	155	154	156	159

Note : All data in Table are a work in progress and subject to change

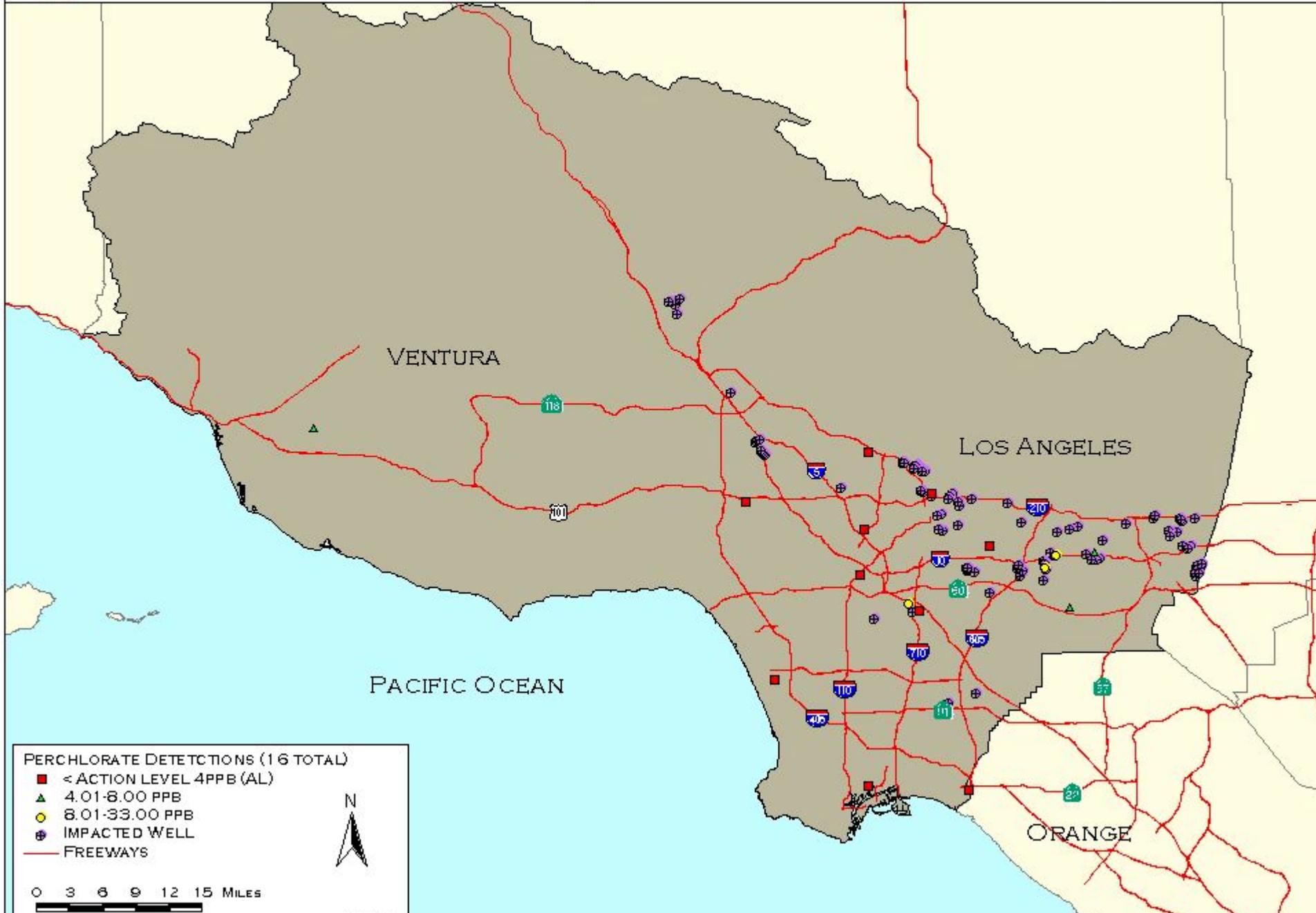
MCL: Maximum Contaminant Levels (MCLs) are enforceable regulatory standards under the Safe Drinking Water Act and must be met by all public drinking water systems to which they apply.

AL: Action Levels (AL) are health-based advisory levels established by DHS for chemicals in drinking water that lack MCLs.





# Perchlorate Detections in Municipal Wells and Groundwater Discharges



PERCHLORATE DETECTIONS (16 TOTAL)

- < ACTION LEVEL 4PPB (AL)
- ▲ 4.01-8.00 PPB
- 8.01-33.00 PPB
- ⊗ IMPACTED WELL
- FREEWAYS



0 3 6 9 12 15 MILES



# Perchlorate Groundwater Detections in Ventura County





# Perchlorate Groundwater Detections in the Central Basin





# Perchlorate Groundwater Detections in the San Fernando Valley



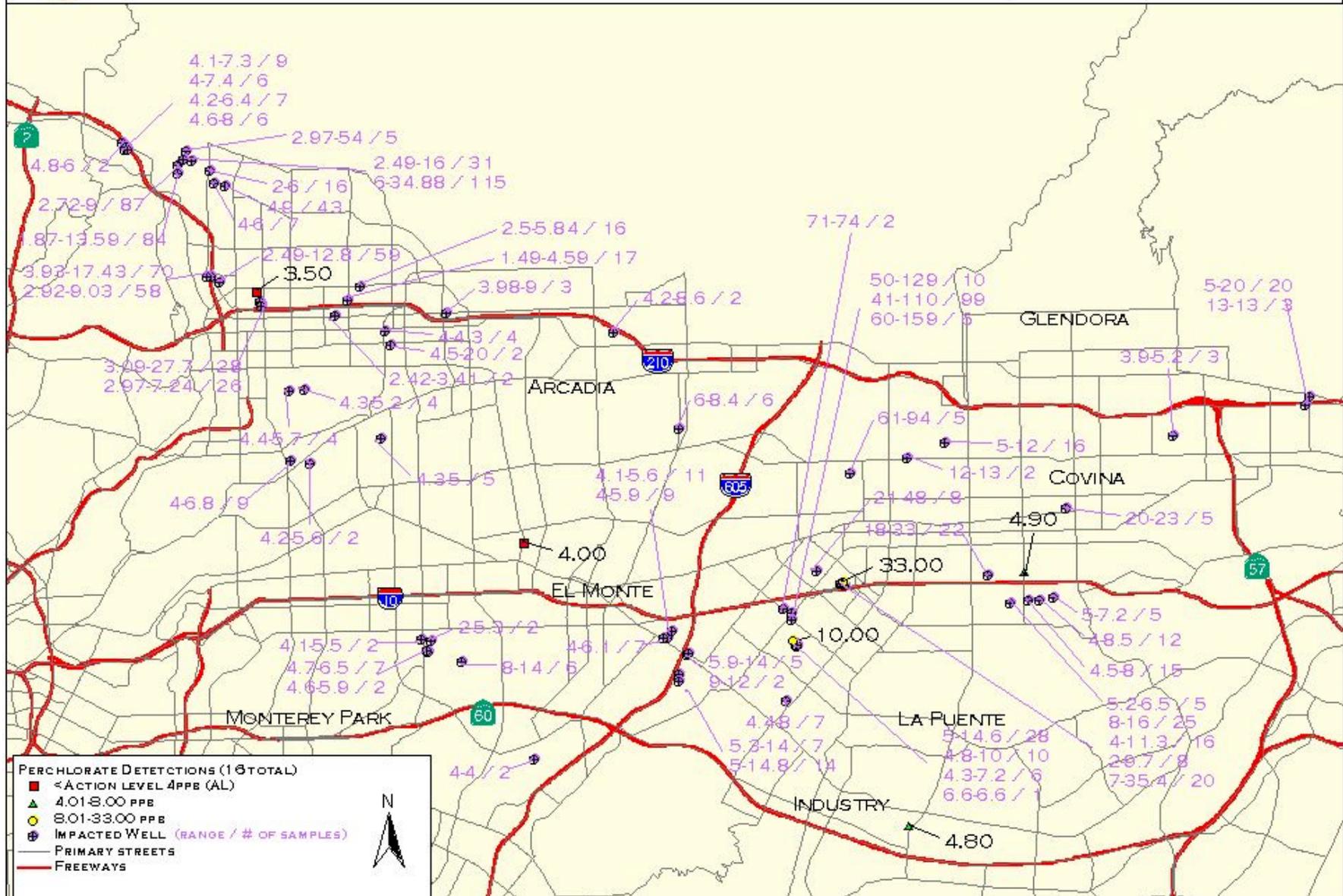
- PERCHLORATE DETECTIONS (16 TOTAL)
- < ACTION LEVEL 4PPB (AL)
  - ▲ 4.01-8.00 PPB
  - 8.01-33.00 PPB
  - ⊕ IMPACTED WELL (RANGE / # OF SAMPLES)
  - PRIMARY STREETS
  - FREEWAYS

0 1 2 3 4 5 MILES

NY 9/15/03

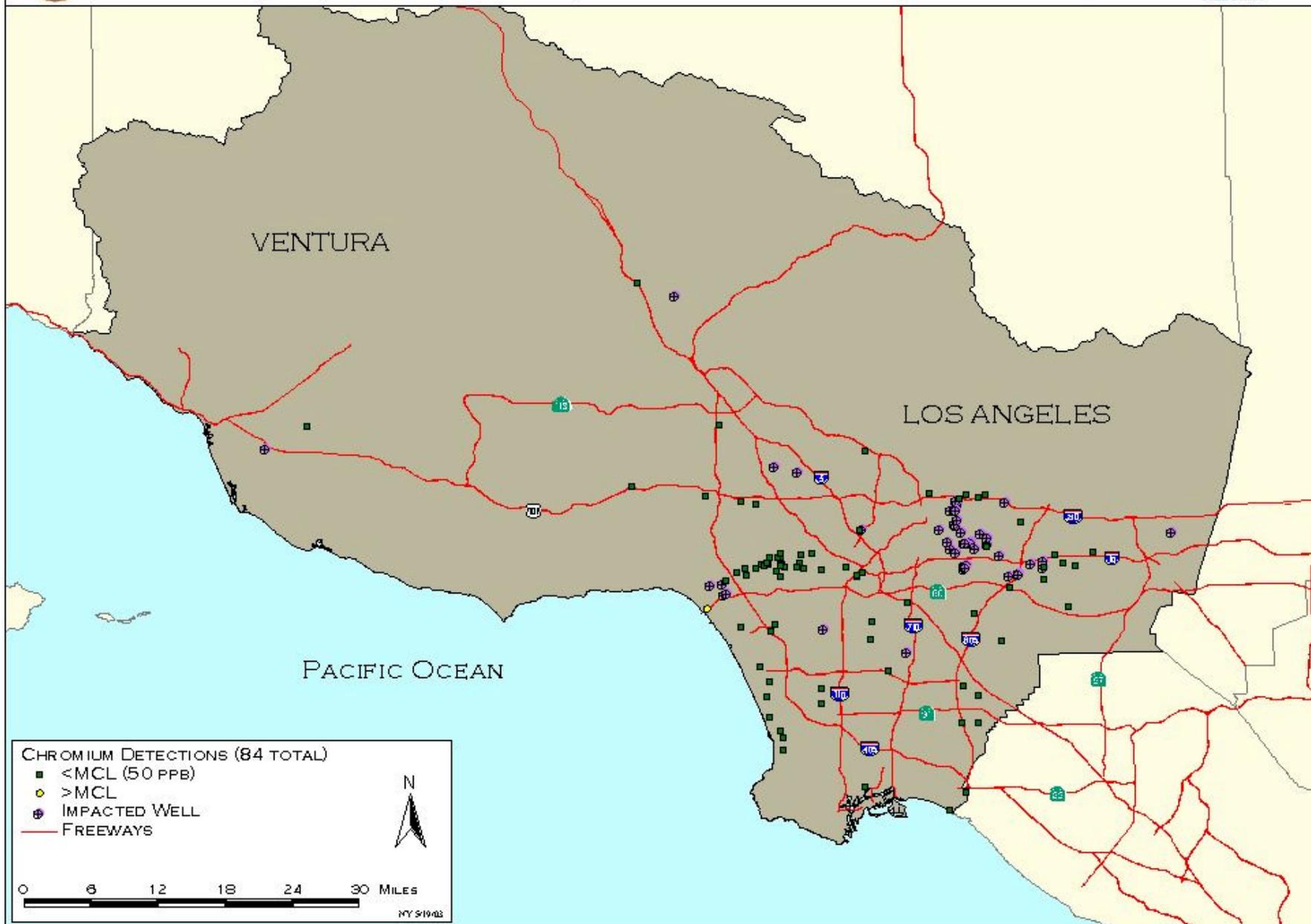


# Perchlorate Groundwater Detections in the San Gabriel Valley





# Chromium Detections in Municipal Wells and Groundwater Discharges



# SUMMARY

- **Definitive widespread testing for EC has identified groundwater impacts region-wide.**
- **The distribution of emerging chemicals appears to be constituent specific.**
- **Detection of ECs in groundwater indicates that additional production wells may be threatened by EC's**
- **The RB & USEPA still assessing soil and groundwater impacts and threats from EC's in Superfund areas.**
- **USEPA groundwater remedies now require treatment plants to be re-designed to remove ECs at higher costs.**
- **Additional data required to determine Region-wide impacts to water resources due to EC's.**